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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/277,171	03/26/1999	CAMERON BOLITHO BROWNE	169.1167	3147

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EXAMINER

HAVAN, THU THAO

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/277,171

Applicant(s)

BROWNE, CAMERON BOLITHO

Examiner

Thu-Thao Havan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Response to Amendment***

Claims 1-38 are pending in the present application.

### ***Response to Arguments***

Applicant's arguments filed July 25, 2003 have been fully considered but they are not persuasive. As addressed below, Becker et al. and Cosman teach the claimed limitations.

Cosman discloses arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity (col. 2, line 8 to col. 4, line 41; figs.1-2 and 4). In other words, Cosman teaches the data structure is provided for storing the visual attributes for each polygon, transparent and opaque. A pixel to be processed is selected. The cumulative registers within the circuits are all initialized (cleared) so as not to bring in any data from other pixels. The next polygon that is present in the pixel is processed, regardless of whether the polygon is present in any particular sample. This is because a transparent polygon will claim some samples of a pixel, but not necessarily all. However, the circuitry of the present invention enables all samples to be processed simultaneously for the current polygon, so there is no waste of resources in making calculations when the current is not present in a particular sample because the processing occurs in parallel for all samples. Each polygon's transmittance value is multiplied by its color components to obtain a pixel shading contribution for that particular polygon. The three color

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components (red, green and blue) are multiplied by the same transmittance value. The polygon color contribution is summed into the pixel. A determined step is process whether there are more polygons in the pixel. If there are more polygons, the flowchart branches back. Otherwise, after all of the polygons are processed, the resultant pixel shading value is the sum of all pixel shading values for every polygon in the pixel. The pixel is stored in a display buffer.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1-38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker (US patent no. 5,861,891) in view of Cosman (US patent no. 6,147,690).

Re claims **1, 36, and 38**, Becker discloses I.) a method of generating a coloured or shaded texture for images to be displayed on a display device or printed, the method including the steps of providing a plurality of shape elements, each shape element defining a surface (col. 3, lines 47-67; col. 4, lines 1-14; fig. 2-4 and 7A—in that figures 2-4 and 7A in Becker clearly discloses the plurality of shapes of a surface); II.) providing each of the shape elements with an opacity which varies over its surface (col. 6, lines 34-58; fig. 2-4--Becker teaches a slider or controller is used to vary the value of the shape elements over its surface. Figures 2-4 of Becker disclose this part of the claim.

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Furthermore, he teaches producing a smooth volume image in an opacity splat plot (col. 2, lines 17-28). Becker teaches an image consisting of shapes in relations to opacity. Also, Becker providing each of the shape elements with an opacity which varies over its surface when he discloses the variation in opacity from a peak at the center to zero point (col. 4, lines 9-13; fig. 7a); III.) rendering the shade elements for output to a printer or display device, such that the overlapping opacities generate a coloured or shaded texture (col. 1 and 2; col. 8, lines 28-67; col. 9; fig. 1, 5, and 7A). In other words, Becker teaches the invention implement in the computer system in that a computer system includes a printer to output images. In figure 1, Becker discloses the displaying of splat plot that is the disclosing of the shade elements for output to a display device. Therefore, Becker teaches the step of rendering the shade elements for output to a printer or display device because he teaches the display of splat plot and the gaussian texture.

However, Becker fails to explicitly teach arranging the shape elements in an overlapping fashion. But, Cosman teaches arranging the shape elements in an overlapping fashion. He discloses pixel-shading system for predetermined polygons. In that he improves multi-sampling that provides undiminished image quality for scene details behind transparent polygons and proper concatenation of multiple overlaid transparent surfaces. Therefore, the multiple overlaid transparent surfaces are arranged in overlapping fashion. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the step of arranging the shape elements in an overlapping fashion of Cosman to the system of Becker to sort all the

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transparent polygons in a front-to-back arrangement for processing the transparent polygon records (Cosman: col. 8, line 40 to col. 9, line 49; figs. 1-2 and 4).

Re claims **24, 29-30, 32, and 34**, Becker teaches I.) apparatus and method for generating a coloured or shaded texture for images, the images to be displayed on a display device or printed, the apparatus including providing a plurality of shape elements, each shape element defining a surface (col. 3, lines 47-67; col. 4, lines 1-14; col. 6, lines 34-58; fig. 2-4; fig. 2-4 and 7A). Figures 2-4 and 7A in Becker clearly discloses the plurality of shapes of a surface consisting of various splat plots in opacity surface; II.) having an opacity which varies across the surface, providing a plurality of shape elements, each of the shape elements defining a surface and having an opacity which varies across the surface, and rendering the shape elements such that the overlapping opacities generate a coloured or shaded texture (col. 6, lines 34-58; fig. 2-4). Becker teaches a slider or controller is used to vary the value of the shape elements over its surface. Figures 2-4 of Becker disclose this part of the claim. Furthermore, he teaches producing a smooth volume image in an opacity splat plot (col. 2, lines 17-28). Becker teaches an image consisting of shapes in relations to opacity. Also, Becker providing each of the shape elements with an opacity which varies over its surface when he discloses the variation in opacity from a peak at the center to zero point (col. 4, lines 9-13; fig. 7a); III.) outputting the coloured or shaded texture to a printer display device (col. 1 and 2; col. 8, lines 28-67; col. 9; fig. 1, 5, and 7A). Becker teaches the invention implement in the computer system in that a computer system includes a printer to output images. In figure 1, Becker discloses the displaying of splat plot that is

the disclosing of the shade elements for output to a display device. Therefore, Becker teaches the step of rendering the shade elements for output to a printer or display device because he teaches the display of splat plot and the gaussian texture. IV.) The A computer storage medium bearing one or more computer software programs for execution on a computer, the computer software program or programs including compiled or uncompiled software instructions (col. 8, lines 28-67; col. 9; fig. 5).

However, Becker fails to explicitly teach arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity, the region lying within a boundary defined by a closed curve. But, Cosman teaches arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity, the region lying within a boundary defined by a closed curve. He discloses pixel-shading system for predetermined polygons (i.e. polygons consisting of regions lying within a defined curve such as circle). In that he improves multi-sampling that provides undiminished image quality for scene details behind transparent polygons and proper concatenation of multiple overlaid transparent surfaces. As for filling a predetermined region of the images, Cosman teaches the sample processor consisting of polygon sample mask bits that fill the predetermined region of the images. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the step of arranging the shape elements in an overlapping fashion to fill a predetermined region of the images such that the region has a substantially uniform opacity, the region lying within a boundary defined by a closed curve of Cosman to the

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system of Becker to sort all the transparent polygons in a front-to-back arrangement for processing the transparent polygon records (Cosman: col. 8, line 40 to col. 9, line 49; figs.1-2 and 4).

Re claims **2-6 and 25-26**, Becker discloses the limitations in these claims (col. 1, lines 10-53; col. 3, lines 55-61) by teaching the various sizes of the glyphs in his invention.

Re claims **7-11 and 27-28**, Becker discloses the focal point and its location (col. 3, lines 13-38; col. 4, lines 9-14). The axis in Becker discloses the focal point. Becker teaches the Gaussian functions, which include the focal point and its location.

Re claim **12**, Becker discloses the predetermined function is exponential or linear (col. 6-8; fig. 6).

Re claims **13-23, 31, 33, 35, and 37**, the limitations of claims 13-23, 31, 33, 35, and 37 are analyzed as discussed with respect to claims 1, 24, 29-30, 32, and 34-35 above.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within



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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Inquiries**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

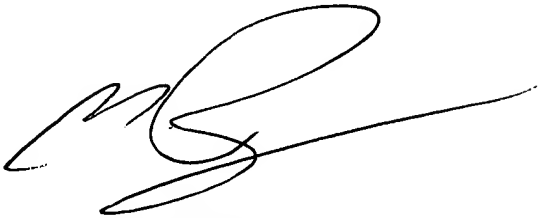
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan  
September 23, 2003



**MICHAEL RAZAVI**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**